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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/572,655	03/06/2007	Dominik Eisert	5367-223PUS	4408

7590 10/15/2008  
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EXAMINER
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LAM, CATHY N

ART UNIT	PAPER NUMBER
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2811

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10/15/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/572,655	Applicant(s) EISERT ET AL.	
	Examiner CATHY N. LAM	Art Unit 2811	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 September 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 19-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 March 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/20/2006, 11/13/2006</u> .                                   | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. Applicant's election with traverse of Species 1, claims 1-18 in the reply filed on 9/15/2008 is acknowledged. The traversal is on the ground(s) that the application was filed under 35 U.S.C. 371, unity of invention (not restriction) practice is applicable in this case. This is not found persuasive because 37 CFR 1.499 gives the examiner authority to restrict under unity of invention in a national stage application, which is proper because the Species 1-4 listed do not related to a single general inventive concept under rule 13.1. See MPEP. 1893.03(d).

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 19-43 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Species there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 9/15/2008.

### **Claim Rejections - 35 USC § 112**

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 15 recites the limitation "a reflective layer" in claim 15. There is insufficient antecedent basis for this limitation in the claim.

5. Claim 6 recites the limitation "the form of sphere" in claim 6. There is insufficient antecedent basis for this limitation in the claim.

6. Claim 9 recites the limitation "the height (h1)", "the distance" in claim 9. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-5, 13, 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Lester (U.S. Patent No. 6,291,839).

Regarding claim 1, Lester discloses in figure 5 a radiation (light) emitting semiconductor chip with an epitaxial multilayer structure 16, 14, 8, which contains an active radiation (light) generating layer 14 and has a first main face (bottom surface of layer 8) and a second main face (upper surface of layer 16) remote from the first main face for coupling out the radiation generating in the active radiation generating layer 14, wherein the first main face of the multilayer structure is coupled to a reflective layer 9 or interface, and a region 16 of the multilayer structure that adjoins the second main face of the multilayer structure is patterned one or two dimensionally fig.5.

It is noted that the term "thin film" is a broad limitation herein because there is no recitation of how thin this thin film is in specific. Therefore, the film disclosed by Lester in figure 5 can be construed as "thin film".

Regarding claim 2, Lester discloses the semiconductor chip as claimed in claim 1, wherein a carrier element (substrate) is coupled to the first main face and the reflective layer or interface is arranged between the carrier element and the multilayer structure. It is noted that the substrate as shown in figure 5 can function as a carrier

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substrate because it is connected to reflector 9, which enables the substrate to electrically connect with the electrical source or circuit (also function as a carrier element) to drive the light emitting device.

Regarding claim 3, Lester discloses in figure 5 the region 16 of the multilayer structure that adjoins the second main face of the multilayer structure has convex elevations.

Regarding claims 4 and 5, Lester discloses in figure 5 the semiconductor chip as claim 3, wherein the elevations 16 have the form of truncated pyramids or truncated cones or a trapezoidal cross sectional form.

Regarding claim 13, as best understood, Lester discloses in figure 5 the layer 9 or interface coupled to the first main area of the multilayer structure has a reflection at least 70% (column 2, lines 65-66).

Regarding claim 15, Lester discloses in figure 5 the multilayer structure is applied on a carrier substrate (substrate) either directly by its first main face or via a reflective layer. It is noted that the substrate as shown in figure 5 can function as "carrier substrate" because it is connected to reflector 9, which enables the substrate to electrically connect with the electrical source or circuit to drive the light emitting device.

Regarding claim 16, Lester discloses in figure 5 the reflective layer 9 is also a conductive layer which can serve as a contact layer of the semiconductor component.

Regarding claim 17, Lester discloses in figure 5 a conductive transparent layer 20 (column 3, lines 41-48) is applied on the second main face of the multilayer

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structure,

### **Claim Rejections - 35 USC § 103**

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 6-12, 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lester.

Regarding claim 6, Lester discloses in figure 5 the elevations 16 have the form of truncated cones, not of a circle or sphere segment cross sectional form as claimed.

However In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966), the Court held that the changes in shape was a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence (MPEP 2144.04, page 2100-137, Rev. 5, August, 2006).

It would have been obvious to one having ordinary skill in the art at the time of the present invention was made, to modify Lester by including the elevation having the circle segment cross sectional form, since this involves only routine skill in the art.

Regarding claims 7 and 8, Lester discloses in figure 5 the elevations have an aperture angle of certain degree(s), not necessarily between approximately 30° and approximately 70° or between approximately 40° and approximately 50°.

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It would have been obvious to one having ordinary skill in the art at the time the invention was made, to modify Lester by including the elevations having an aperture angle of between approximately 30° and approximately 70° or between approximately 40° and approximately 50°, since it has been held that where the general conditions of a claim are disclosed in the prior art discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claim 9, Lester discloses in figure 5 the elevations 16 have certain heights. Lester does not disclose the height of the elevations being at least as large as the distance between a non patterned region of the multilayer structure and the active, radiation generating layer.

It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to modify Lester by including the height of the elevations being at least as large as the distance between a non patterned region of the multilayer structure and the active, radiation generating layer, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272,205 USPQ 215 (CCPA 1980).

Regarding claim 10, Lester discloses in figure 5 the elevations 16 have certain heights. Lester does not disclose the height of the elevations being approximately twice as large as the distance between the non patterned region of the multilayer structure and the active, radiation generating layer.

It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to modify Lester by including the height of the elevations being

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approximately twice as large as the distance between the non patterned region of the multilayer structure and the active, radiation generating layer and the elevation, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 11, Lester discloses in figure 5 the elevations have a light emitted opening dimension.

But Lester does not disclose the cell size of the elevations being at most approximately five times as large as the height of the elevations.

It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to modify Lester by including a light emitted opening dimension of the elevations being at most approximately five times as large as the height of the elevations, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 12, Lester discloses in figure 5 the elevations have a light emitted opening dimension. But Lester does not disclose the cell size of the elevations being at most approximately three times as large as the height of the elevations.

It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to modify Lester by including the light emitted opening dimension of the elevations being at most approximately three times as large as the height of the elevations, since it has been held that discovering an optimum value of a



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result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 14, Lester discloses in column 2, lines 65-67 the layer 9 coupled to the first main area of the multilayer structure has a reflection of at least 70%. Lester, however does not exclusively discloses a reflectivity of at least 85%.

It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to modify Lester by including the layer or interface couple to the first main area of the multilayer structure as a reflectivity of at least 85%, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

11. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lester in view of Yamazaki et al. (U.S. Patent No. 6,515,310).

Regarding claim 18, Lester discloses in figure 5 substantially all the structure set forth in claim 1 except a transparent protective layer is applied on the second main face of the multilayer structure.

However, Yamazaki et al. disclose in figure 3A a semiconductor device comprises a transparent protective layer 305 applied on top surface of the multilayer structure to protect the device.

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to modify Lester by including a transparent protective layer being applied on the second main area of the multilayer structure to protect the device.

### **Double Patenting**

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Omum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321 (c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer.

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A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claims 1, 3-18 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1- 17 of copending Application No. 10/523,551. Although the conflicting claims are not identical, they are not patentably distinct from each other because copending claims do not explicitly state the type for each first and second layer of the device. It would have been obvious for one of ordinary skill in the art at the time of the invention was made to include an epitaxial, in order to make a multilayer structure, of which official notice is taken.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CATHY N. LAM whose telephone number is (571)270-5021. The examiner can normally be reached on M-F 7:30AM to 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Gurley can be reached on 571-272-1670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lynne A. Gurley/  
Supervisory Patent Examiner, Art Unit 2811

CL  
9/30/2008